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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/715,288

11/17/2003

Gareth G. Hougham

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10/04/2004

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EXAMINER

TSUKERMAN, LARISA Z

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/715,288

Applicant(s)

HOUGHAM ET AL.

Examiner

Larisa Z Tsukerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 11-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10, drawn to an interposer for connecting a module to a printing wiring board, classified in class 439, subclass 66.
- II. Claims 11- 40, drawn to method for fabricating an electrical contact button, classified in class 29, subclass 846.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)).

In the instant case a claimed “\*-a hollow body” can be made without “sacrificial posts”. Because these inventions are distinct for the reason given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Paul D. Greeley on 09/20/2004 a provisional election was made without traverse to prosecute the invention of group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11- 40 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Beaman et al. (5738531).

**In regard to claim 1**, Beaman et al. disclose an interposer 3 comprising a hollow body (via) 7 of electrically conductive material disposed in an electrically insulating carrier 4.

**In regard to claim 2**, Beaman et al. disclose the hollow body 7 comprises at least one void.

**In regard to claim 3**, Beaman et al. disclose the hollow body comprises a plurality of voids (openings at the top and at the bottom).

**In regard to claim 4**, Beaman et al. disclose the hollow body 7 comprises at least two voids (top and bottom openings) in registration with one another and disposed on opposite sides of the carrier 4.

Claims 1 - 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lightbody et al. (4528500).

**In regard to claim 1**, Lightbody et al. disclose an interposer 11 comprising a hollow body 12 of electrically conductive material disposed in an electrically insulating carrier 11.

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**In regard to claim 2**, Lightbody et al. disclose the hollow body 12 comprises at least one void (a space between shoulders 37 and 38, and space near 35 and near 36).

**In regard to claim 3**, Lightbody et al. disclose the hollow body 12 comprises a plurality of voids (a space between shoulders 37 and 38, and space near 35 and near 36).

**In regard to claim 4**, Lightbody et al. disclose the hollow body 12 comprises at least two voids (space near 35 and near 36) in registration with one another and disposed on opposite sides of the carrier 11.

**In regard to claim 5**, Lightbody et al. disclose the carrier 11 comprises a plurality of vias 21 in which a plurality of the hollow bodies 12 is disposed.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 - 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Tighe et al. (5924875).

**In regard to claim 6**, Tighe et al. disclose an interposer 9 for connecting a module to a printing wiring board comprising:

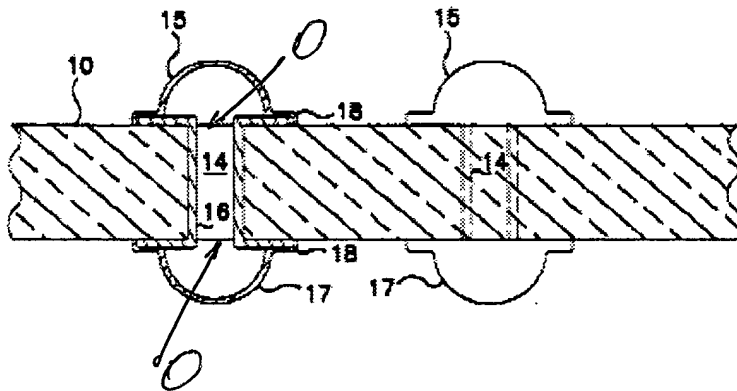
a carrier 10 that has at least one electrically conductive via 16 and that is disposed so that the via 16 is in registration with a connector of the module 3 and a connector of the printed wiring board 1, and at least one electrical contact button 15, 17

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that is hollow and that is disposed in the via 16 for electrical contact with the connector of the module and the connector of the printed wiring board 1.

**In regard to claim 7 and 8**, Tighe et al. disclose the electrical contact button 15, 17 comprises at least one void/ a plurality of voids O (see Attachment).

**In regard to claim 9**, Tighe et al. disclose the electrical contact button 15, 17 comprises at least two voids (openings O, see Attachment) in registration with one another and disposed on opposite sides of the carrier 10.



Attachment

**In regard to claim 10**, Tighe et al. disclose the carrier 10 comprises a plurality of the vias 14 in which a plurality of the electrical contact buttons 15, 17 is disposed (see Fig.7).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Larisa Z Tsukerman whose telephone number is (571)-272-2015. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A Bradley can be reached on (571)-272-2800 ex. 33. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LT, 09/23/2004



**THO D. TA**  
**PRIMARY EXAMINER**